

Editorial

From farm to plate & beyond - A culture & context sensitive perspective for food safety

This World Health Day, celebrated on 7th April, the World Health Organization (WHO) has brought food safety to the centre stage with the theme 'Food safety - from farm to plate, make food safe'. This is a call for increased attention to food safety and its potential impact on public health, food security, and food trade competitiveness of countries¹. From the days of policies working towards sheer food security as a solution to the problems of malnutrition to broad basing them to take cognizance of nutrition security, food safety was always considered an addendum to nutrition². Today, in the context of the challenges posed by the changing patterns of food production, distribution and consumption in the increasingly globalizing economies such as ours, food safety has come to be top on priority³. Now is the time nutrition is integrated inextricably with food safety and both should be seen as integral parts of nutrition as well as food safety promotion policies and programmes. Given the background of the current nutritional problems in India, we propose that the scope of food safety or the term safe food should be expanded to include what we call 'nutrition safety'. Here we also argue why India needs a more culture and context sensitive perspective for ensuring food safety.

Defining nutritionally safe

Nutrition safety is hard to define. But given the fact that there is sufficient evidence to link high consumption of energy-dense food to rising rates of obesity and associated non-communicable diseases, the terms High fat, salt and sugar (HFSS) and nutrient-poor food are commonly used to characterize foods perceived as unhealthy^{4,5} and to distinguish these from more nutritious options. However, it is not

always the individual food that is healthy or unhealthy but it is the overall diet and the activity pattern of the population that decides this. Nutrient poor food items are largely those found at the top of the Food Pyramid of Indian Dietary Guidelines⁶. These are called nutritionally unsafe just because these are recommended to be consumed 'sparingly'. Today, the food systems have undergone considerable changes and physical activity among population has lowered. All of these pose serious threat to nutrition safety, worsening the dual burden of malnutrition. There are increasing demands for restricting certain foods usually considered energy-dense and nutrient poor. This calls for making a distinction between nutrient-dense foods and discretionary calories as suggested by the Dietary Guidelines for Americans - 2005⁷. Discretionary calories could be consumed later, in proportion to energy needs. The recent guidelines also suggested that by selecting the nutrient-dense food first, consumers will meet the recommended nutrient intakes without exceeding their energy allowance⁸. However, compared to the West, consumer awareness on monitoring nutrient quality of food is minimal in countries like India.

Creating a healthy retail and sales environment through policy changes can lead to changes in the food ecosystem. An attempt to promote not only safe but healthy food choices is being attempted through the food labelling regulation of the Food Safety and Standards Authority of India (FSSAI), which mandates that nutrition and ingredients related information is provided to the consumer alongside safety information like best-before/use-by date, storage instructions, allergens, quality symbols, *etc*⁹.

Food safety - The need to revisit

While the regulatory and administrative framework taken up by FSSAI since 2006, is critically important for ensuring that safe food is made available to the consumers, food safety should not be constructed as an attribute reliant on producers, retailers, handlers and regulators. Positioning them thus makes these concerns concentrate mostly on the 'supply side' of food safety from food production to distribution. Food safety is determined not only by how food is produced and delivered, but also by issues on the 'demand side' - how consumers acquire, cook, store, and consume food. Food safety cannot be ensured only with stricter regulation, compliance with global standards of manufacturing, distribution and competitiveness. There is a need to consider behavioural, structural and cultural issues along the continuum of food from farm to plate and then to consumption¹⁰.

The 'five keys for safer food' campaign of WHO is being used to spread the food hygiene message among the food manufacturers and handlers throughout the world. This campaign promotes personal hygiene, adequate cooking, avoiding cross-contamination, keeping food at safe temperatures, and avoiding food from unsafe sources¹¹. Such campaigns may however, result in limited protection unless food safety is also understood and promoted at the household level. In India, diverse food habits, hygiene practices and centuries-old traditions co-exist alongside the changes introduced by globalization. In addition, the scarcity of resources at the household level make food safety promotion a daunting public health task.

Food-borne illnesses continue to be prevalent; a nation-wide study in 2006 revealed that about 13 per cent of households reported food-borne illnesses in the previous fortnight (of the survey)¹². Such routine food-borne illnesses may relate to a host of practices at individual and household levels, including behaviours pertaining to how food is procured (what quantity/quality and from whom), stored (for example, without refrigeration), prepared (household processing, extent of cooking, fuel used, *etc.*), and consumed (without washing hands, freshly cooked or reheated). These are, in turn, influenced not only by cultural factors (like cooking practices) but also by structural (like availability of safe fuel, clean water, *etc.*) and individual factors (*e.g.* people's knowledge and beliefs)¹⁰. Unlike many western countries, in India, semi-processed primary agricultural produce and raw materials are procured from the market before these

are further processed and made suitable for cooking at home. In this situation, adulteration becomes a major food safety concern. Adulteration may be intentional or unintentional. In both forms, the quality or the nature of the food is altered and may even become harmful¹³. This problem is sufficiently normalized that most people do not consider it to be a health hazard, and there is little drive on the part of the public to resist deliberate adulteration¹⁴. In addition, a relative lack of public awareness of existing food regulations has further accentuated the problems.

As only a small percentage of Indian homes own refrigerators, the campaigns about cross-contamination, reheating, or thawing tend to be of limited relevance. Even without powered refrigeration, many Indians practice indigenous ways of storing leftover foods. It is also common to cook as and when required in small quantities to avoid storage^{14,15}. The safety implications of commonly employed food storage and consumption practices need to be better understood so that the associated risks could be effectively communicated and feasible alternatives encouraged.

Hand washing, a behaviour closely linked with food safety, is relatively routine in India, and it is often customary to wash hands before handling food¹². Approximately 75 per cent of individuals wash hands only with water and often do not use soap. Even after defecation, only 50 per cent use soap when washing hands^{12,14}. Usage of soap can reduce the risk of diarrhoeal diseases by 42-47 per cent¹⁶. The customary practice of hand washing can be strengthened by encouraging routine and universal access and use of soap for hand washing.

One of the common threats to food safety is inadequate cooking. This may not, however, pose as large a threat to food safety in India, as in other countries. Food in India is generally cooked and served hot. This cultural practice can be strengthened with education regarding the scientific basis for thorough heating rather than simple warming¹⁴. In India, with an estimated 37 per cent of Indians living in poverty, most homes do not have a separate designated kitchen, such that living, cooking and eating occur in a common place^{12,17}. Availability of safe drinking water is an important factor that affects food safety. For many episodes of diarrhoeal diseases among adults and the estimated 3,00,000 deaths among children (< 5 yr), lack of protected water supply was an important reason apart from other factors such as sanitation and environmental conditions¹⁸.

The way forward

Many food safety challenges faced by people in India need multi-dimensional approach. In order to motivate self-directed changes in practices at individual or household level, people need to be given not only the scientific rationale to alter the established food related practices but also the means and resources to practice the safe ones. Food safety policies and programmes should aim to address the entire farm-to-plate-to-consumption continuum using culturally sensitive and adaptive approaches. Creating evidence and popularizing intelligent food synergies is required to overcome the dueling effects of malnutrition and food safety.

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